Climate change research unit – desertification

What is Desertification?

* The process by which fertile land becomes desert
* Typically as a result of drought, deforestation, or inappropriate agriculture

Places that have been affected

* 168 countries across the world are effected
* Costs $490 Billion (US dollars) per year
* Is wiping out an area three times the size of Switzerland
* According UNCCD (United nation convention to combated desertification) 168 countries across the world are affected. In 1990 there were only 110.
* Desertification Is wiping out an area three times the size of Switzerland

What is happing to the population?

* The population is increasing 3% a year
* In the next 20 to 30 year the population will double
* The world will not able to hold the population because all of the land is drying out and people can not grow enough food

What is happing to the population?

(Cont.)

* Experts think we will need 120 million (1,200,000 squared km) more hectares agricultural land. This is about the size of South Africa
* By 2050 the demand for food will increase by 60%
* In Africa, estimated by the UNCCD, 4-12 percent of agricultural GDP (Gross Domestic Product) is lost because of deteriorating environment.

Dry-lands

* Dry-land biomes are the most prevalent biomes on the planet and over a third of the planets populous live in these areas.
* These people depend on resources like crops and livestock. Both of those examples are dependent on the growth of plants.
* With the increase in the desertification of the land combined with the lack of water make growing plants and sustaining them almost impossible

Anthropogenic Causes For Desertification

* Overgrazing: Overgrazing is when the livestock, like cows, are fenced in and are forced to graze in the same area all the time.
* This wasn’t an issue earlier on for humans because the animals would move with the rain and the humans would move with them, but now that we have a steady food supply we don’t need to move and we fence in our animals.
* Destruction of Plants: When trees are cut down in dry places it leaves the soil unprotected. The soil dries up, turns to dust and is whisked away by the wind.
* Over Farming: Farmers will often not move their farm because it is impractical and expensive. This means they use the same land all the time. Due to the continuous farming of the soil it loses its nutrients and dries up.

Effects of Desertification

* Food Loss: When all of the soil is ruined plants can’t grow on it which causes famines and other types of food loss
* Weather: The amount of rain decreases and the number and frequency of dust storms increases. This affects the surrounding area as well as the effected area.

Quick facts

1. 2.6 billion people depend directly on agriculture, but sadly 52% of the land used for agriculture is moderately or even severely affected by soil degradation.
2. Land degradation disturbs over 1.5 billion people globally.
3. Due to drought and desertification each year 12 million hectares are lost, 23 hectares/minute, where 20 million tons of grain could have been grown.
4. 74% of the poor population is directly affected by land degradation globally.

How to Reverse Desertification

* Establishing seed banks - a seed bank is a place seed are stored for a short term use in farms
* Reintroducing selected species
* Countering erosion through terracing and other measures
* Enriching the soil with nutrients
* Planting trees

Signs of Desertification

* **Declining groundwater table** The **Groundwater table** is the surface of the **Groundwater** exposed to an atmospheric pressure beneath the surface of the saturated zone
* **Salinization of soil and near-surface-soil water** – adds more salt in to the soil and water
* **Reduction in areal extent of surface water in streams, ponds, and lakes**
* **Unnaturally high rates of soil erosion**
* **Damage to native vegetation**

**Dry-lands**

**Dry-land biomes are the most prevalent biomes on the planet and over a third of the planets populous live in these areas.**

**People that live in the dry-lands depend on resources like crops and livestock. Both of those examples are dependent on the growth of plants.**

**With the increase in the desertification of the land combined with the lack of water make growing plants and sustaining them almost impossible**

Health Concerns Caused by Desertification

* The threat of malnutrition increases dramatically because food and water supplies are lacking
* Poor hygiene and lack of clean water increases the amount of water and airborne diseases.
* The dust that gets picked up by the wind causes more people to have respiratory issues and diseases.
* When source of water is depleted in an area the humans around the area tend to migrate, this causes infectious sicknesses to spread around the world.

Dry-lands

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3. "Desertification Crisis Affecting 168 Countries Worldwide, Study Shows." *Green Facts*. Web. <http://www.greenfacts.org/en/desertification/index.htm#1>.
4. "Reverse Desertification DJI | Djibouti - Africa." *Bēhance*. Adobe. Web. <https://www.behance.net/gallery/2371668/Reverse-Desertification-DJI-BArch-Year-06>.
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